

***Amendments to the Claims***

The listing of claims will replace all prior versions, and listings of claims in the application.

1. *(Currently amended)* A method of preparing a user recommendation comprising:

generating a sparse unary ratings matrix from a user's selected preferences, wherein said user's selected preferences are represented as binary data entries in said sparse unary ratings matrix, wherein each binary data entry has a value of either zero or one;

forming a plurality of data structures representing said sparse unary ratings matrix;

forming a runtime recommendation model from said plurality of data structures;

determining a recommendation from said runtime recommendation model in response to a request for a recommendation; and

providing said recommendation in response to said request.

2. *(Original)* The method of claim 1 further comprising calculating a unary multiplicity voting recommendation from said runtime recommendation model.

3. *(Original)* The method claim 1 further comprising calculating a non-unary multiplicity voting recommendation from said runtime recommendation model.

4. *(Previously presented)* The method of claim 2 wherein said calculating a unary multiplicity voting recommendation comprises calculating an anonymous recommendation.

5. *(Previously presented)* The method of claim 2 wherein said calculating a unary multiplicity voting recommendation comprises calculating a personalized recommendation.

6. *(Previously presented)* The method of claim 3 wherein said calculating a non-unary multiplicity voting recommendation comprises calculating an anonymous recommendation.

7. *(Previously presented)* The method of claim 3 wherein said calculating a non-unary multiplicity voting recommendation comprises calculating a personalized recommendation.

8. *(Currently amended)* The method of claim 1,  
wherein said step forming a runtime recommendation model from said plurality of data structures comprises:

mapping said sparse unary ratings matrix into a plurality of sub-space ratings matrices;

~~wherein~~ matrices, said mapping ~~step comprises~~ comprising multiplying said unary ratings matrices by a mappings matrix between said unary ratings matrices and

a plurality of categories, and ~~further~~ wherein each of said sub-space ratings matrices corresponds to one of said plurality of categories.

9. (*Withdrawn*) A method of preparing a recommendation to be accessed by a user comprising the steps of:

providing a sparse ratings matrix;

banding said sparse ratings matrix;

distributing said banded sparse ratings matrix to a plurality of computing nodes, wherein each of said computing nodes generates an output;

forming a runtime recommendation model from said output of said plurality of computing nodes;

determining a recommendation from said runtime recommendation model in response to a request from a user; and

providing said recommendation to said user.

10. (*Withdrawn*) A method of preparing a recommendation to be accessed by a user comprising the steps of:

providing a sparse ratings matrix;

striping said sparse ratings matrix;

distributing said striped sparse ratings matrix to a plurality of computing nodes, wherein each of said computing nodes generates an output;

forming a runtime recommendation model from said output of said plurality of computing nodes;

forming a runtime recommendation model from said plurality of sub-space ratings matrix;

determining a recommendation from said runtime recommendation model in response to a request from a user; and

providing said recommendation to said user.

11. *(Currently amended)* A method of preparing a user recommendation comprising:

generating a sparse unary ratings matrix, ~~wherein said sparse unary ratings matrix includes~~including ratings data represented as binary data entries, wherein each binary data entry has a value of either zero or one;

providing an update ratings data structure;

forming a plurality of data structures representing said sparse unary ratings matrix;

forming a runtime recommendation model from said plurality of data structures and said update ratings data structure;

determining a recommendation from said runtime recommendation model in response to a request for a recommendation; and

providing said recommendation in response to said request.

12. *(Original)* The method of claim 11 further comprising calculating a unary multiplicity voting recommendation from said runtime recommendation model.

13. *(Original)* The method of claim 11 further comprising calculating a non-unary multiplicity voting recommendation from said runtime recommendation model.

14. *(Previously presented)* The method of claim 12 wherein said calculating a unary multiplicity voting recommendation comprises calculating an anonymous recommendation.

15. *(Previously presented)* The method of claim 12 wherein said calculating a unary multiplicity voting recommendation comprises calculating a personalized recommendation.

16. *(Previously presented)* The method of claim 13 wherein said calculating a non-unary multiplicity voting recommendation comprises calculating an anonymous recommendation.

17. *(Previously presented)* The method of claim 13 wherein said calculating a non-unary multiplicity voting recommendation comprises calculating a personalized recommendation.

18. (*Currently amended*) The method of claim 11, further comprising:

mapping said sparse unary ratings matrix into a plurality of sub-space ratings matrices; ~~wherein, said mapping step comprises~~ comprising multiplying said unary ratings matrices by a mapping matrix between said unary ratings matrices and a plurality of categories, and wherein each of said sub-space ratings matrices corresponding to one of said plurality of categories.

19. (*Withdrawn*) The method of claim 1, wherein forming a runtime recommendation model from a plurality of data structures, comprises:

forming a first recommendation model from said plurality of data structures;  
and

perturbing said first recommendation model to generate a runtime recommendation model.

20 - 26. (*Canceled*).

27. (*Withdrawn*) The method of claim 1, wherein forming a runtime recommendation model from a plurality of data structures, comprises:

forming a first recommendation model from said plurality of data structures;  
truncating said first recommendation model to generate a runtime recommendation model.

28 - 34. (*Canceled*).

35. (*Withdrawn*) A method of preparing a recommendation to be accessed by a user comprising the steps of:

providing a first ratings matrix;

providing a second ratings matrix;

forming a runtime recommendation model from a cross-set of co-occurrences of said first ratings matrix and said second ratings matrix;

calculating a recommendation from said runtime recommendation model in response to a request from a user; and

providing said recommendation to said user.

36. (*Currently amended*) A method of preparing a user recommendation in a first recommendation system, comprising:

receiving a runtime recommendation model from a second recommendation system, wherein the runtime model is formed from a plurality of data structures representing a unary array of entries that can be arithmetically manipulated, wherein data in the unary array of entries is binary data, wherein each binary data entry has a value of either zero or one, and wherein a majority of the entries in the array are zero;

receiving a request for a recommendation;

generating a recommendation using the received runtime recommendation model; and

transmitting the recommendation.

37. *(Previously presented)* The method of claim 36, wherein said generating a recommendation comprises:

calculating a unary multiplicity voting recommendation from the received runtime recommendation model; and

generating an anonymous recommendation.

38. *(Previously presented)* The method of claim 36, wherein said generating a recommendation comprises:

calculating a unary multiplicity voting recommendation from the received runtime recommendation model; and

generating a personalized recommendation.

39. *(Previously presented)* The method of claim 36, wherein said generating a recommendation comprises:

calculating a non-unary multiplicity voting recommendation from the received runtime recommendation model; and

generating an anonymous recommendation.

40. *(Previously presented)* The method of claim 36, wherein said generating a recommendation comprises:

calculating a non-unary multiplicity voting recommendation from the received runtime recommendation model; and

generating a personalized recommendation.



41. (*Currently amended*) A method for generating a runtime recommendation model in a first recommendation system, comprising:

retrieving a unary array of entries that can be arithmetically manipulated, wherein data in the unary array of entries is binary data, wherein each binary data entry has a value of either zero or one, and wherein a majority of the entries in the array are zero;

receiving an update to the array of entries;

generating the runtime recommendation model from a plurality of data structures representing the unary array of entries; and

providing the runtime recommendation model to a second recommendation system, wherein the second recommendation system generates a recommendation using the runtime recommendation model.